

WE CLAIM:

1                    1.        A heat reflective coated structural article comprising a heat reflective  
2        component and a coated structural article component which comprises a substrate having an  
3        ionic charge coated with a coating having essentially the same ionic charge wherein said coating  
4        consists essentially of a filler material and a binder material and wherein said binder material  
5        bonds the filler material together and to the substrate and wherein said coating does not bleed  
6        through said substrate.

2                    2.        The heat reflective coated structural article according to claim 1 wherein  
the heat reflective component is selected from the group consisting of elastomeric coatings,  
aluminum fiber coatings, acrylic coating systems, polyurethane coating systems, ceramic  
coatings, insulating paints, metal pigment paints, metal pigment pastes, dyes, colored coatings  
and aluminum flakes.

3                    3.        The heat reflective coated structural article according to claim 2 wherein  
2        the heat reflective component further comprises a coloring agent selected from the group  
3        consisting of coloring dyes and colored coatings.

1                    4.        The heat reflective coated structural article according to claim 1 wherein  
2        the heat reflective coated structural article has a solar reflectance of from 65% to 100%.

5. The heat reflective coated structural article according to claim 4 wherein the heat reflective coated structural article has a solar reflectance of from 70% to 90%.

6. The heat reflective coated structural article according to claim 1 wherein the heat reflective coated structural article has a solar reflectance of from 74% to 86%.

7. The heat reflective coated structural article according to claim 1 wherein the heat reflective coated structural article has a visible reflectance of from 65% to 100%.

8. The heat reflective coated structural article according to claim 1 wherein the heat reflective coated structural article has a visible reflectance of from 70% to 90%.

9. The heat reflective coated structural article according to claim 1 wherein the heat reflective coated structural article has a visible reflectance of from 74% to 86%.

10. The heat reflective coated structural article according to claim 1 wherein the heat reflective component is applied to one side of the coated structural article.

11. The heat reflective coated structural article according to claim 1 wherein said substrate is planar and is coated on one side with said coating and wherein said heat reflective component is applied to said coating.

12. The heat reflective coated structural article according to claim 1 wherein said substrate is planar and is coated on both sides with said coating.

13. The heat reflective coated structural article according to claim 1 wherein the heat reflective component is less than 2 millimeters thick.

14. The heat reflective coated structural article according to claim 1 wherein said article is incorporated as the top layer into a commercial roofing product.

15. The heat reflective coated structural article according to claim 1 wherein said substrate is fiberglass, said filler is selected from the group consisting of fly ash, calcium carbonate, ceramic microspheres and mixtures thereof and said binder is acrylic latex.

16. The heat reflective coated structural article according to claim 1 wherein the substrate is selected from the group consisting of glass fibers, polyester fibers, cellulosic fibers, asbestos, steel fibers, alumina fibers, ceramic fibers, nylon fibers, graphite fibers, wool fibers, boron fibers, carbon fibers, jute fibers, polyolefin fibers, polystyrene fibers, acrylic fibers, phenolformaldehyde resin fibers, aromatic and aliphatic polyamide fibers, polyacrylamide fibers, polyacrylimide fibers, and mixtures thereof.

17. The heat reflective coated structural article according to claim 1 wherein said heat reflective coated structural article further includes a water repellent material.

1                   18.    The heat reflective coated structural article according to claim 1 wherein  
2   said heat reflective coated structural article further includes an antifungal material.

1                   19.    The heat reflective coated structural article according to claim 1 wherein  
2   said heat reflective coated structural article further includes an antibacterial material.

1                   20.    The heat reflective coated structural article according to claim 1 wherein  
2   said heat reflective coated structural article further includes a flame retardant material.

1                   21.    The heat reflective coated structural article according to claim 1 wherein  
2   said heat reflective coated structural article further includes a surface friction agent.

1                   22.    The heat reflective coated structural article according to claim 1 wherein  
2   said heat reflective coated structural article further includes an algacide.

1                   23.    The heat reflective coated structural article according to claim 1 wherein  
2   said substrate is bonded together by a binder material consisting essentially of urea formaldehyde  
3   and acrylic latex.

1                   24.     The heat reflective coated structural article according to claim 1 wherein  
2     the coated structural article component is coated with a coating consisting essentially of a filler  
3     material and a binder material and wherein

4                   a)     said coated structural article component is from 10% to 25% by  
5     weight glass fibers; and

6                   b)     said coating is from 84% to 96% filler selected from the group  
7     consisting of fly ash, charged calcium carbonate, ceramic microspheres and mixtures thereof and  
8     from 16% to 4% acrylic latex binder material.

                  25.     The heat reflective coated structural article according to claim 24 wherein  
said coating further includes SBR rubber.

                  26.     The heat reflective coated structural article according to claim 25 wherein  
said acrylic latex binder and said rubber are cross linked.

1                   27.     The heat reflective coated structural article according to claim 24 wherein  
2     said glass fibers are bonded together by a mixture of from 99% to 75% urea formaldehyde and  
3     from 1% to 25% acrylic latex.